ABSTRACT OF THE DISCLOSURE

The location of gases that are not visible to the unaided human eye can be determined using tuned light sources that spectroscopically probe the gases and cameras that can provide images corresponding to the absorption of the gases. The present invention is a light source for a backscatter absorption gas imaging (BAGI) system, and a light source incorporating the light source, that can be used to remotely detect and produce images of "invisible" gases. The inventive light source has a light producing element, an optical amplifier, and an optical parametric oscillator to generate wavelength tunable light in the IR. By using a multi-mode light source and an amplifier that operates using 915 nm pump sources, the power consumption of the light source is reduced to a level that can be operated by batteries for long periods of time. In addition, the light source is tunable over the absorption bands of many hydrocarbons, making it useful for detecting hazardous gases.